

|  |  |
|--|--|
| <p><b>2002-646205/70</b>      A14 D15 F09 H01 (A13<br/>A25 A87 A96 A97 D21<br/>F06)</p> <p>SNF SA      <b>SNFS- 2000.10.23</b><br/>2000.10.23 2000-013771(+2000FR-013771) (2002.04.26) C08F 2/10,<br/>20/00      *FR 2815635-A1</p> <p><b>Polymerization of monomers in an aqueous solution comprises adding a salt in several portions to maintain fluidity</b><br/><b>C2002-182486</b><br/>Addnl. Data: HUND R, COCHIN D</p>   | <p>A(2-D, 8-S6, 10-B5, 12-W12C) D(4-A, 8-B10) F(3-C5, 5-A2C, 5-A4B) H(1-B6C)</p> <p>The process can be used to polymerize a wide range of nonionic monomers, preferably acrylamide, anionic monomers, e.g. (meth)acrylic acid (many others mentioned), and cationic monomers, preferably quaternized aminoalkyl (meth)acrylates or (meth)acrylamides or diallyl dialkyl ammonium halide polymers. The resulting polymers are useful e.g. in the papermaking industry (e.g. as retention or dewatering aids), water and waste water treatment, and mining, petroleum, cosmetics and textile industries.</p> |
| <p><u><b>NOVELTY</b></u><br/>Polymerization of monomers in an aqueous solution in the presence of a water-soluble polymer dispersant or coagulant and a salt comprises adding the salt in several portions, one portion being added before that start of polymerization and one or more other portions being adding during the early stages of polymerization.</p> <p><u><b>DETAILED DESCRIPTION</b></u><br/>An INDEPENDENT CLAIM is also included for polymers and copolymers produced by the process.</p> <p><u><b>USE</b></u></p> | <p><u><b>ADVANTAGE</b></u><br/>The process yields polymer dispersions that retain good fluidity throughout the polymerization process, have a high solids content (15-30%) and have good stability, over a wide range of molecular weights.</p> <p><u><b>EXAMPLE</b></u><br/>A mixture of acrylamide (50%, 137.17 g), acryloyloxyethyl trimethyl ammonium chloride (80%, 28.75 g), acryloyloxyethyl dimethyl benzyl ammonium chloride (80%, 135.25 g), poly(diallyl<br/>FR 2815635-A+</p>  |

dimethyl ammonium chloride) (20%, 74.3 g), ammonium sulfate (127.15 g), glycerol (6.14 g) and water (469.55 g) was heated to 38°C, deaerated with nitrogen for 30 minutes, and treated with VA044 (RTM) initiator. Ammonium sulfate (7.14 g) was added after 40, 80 and 120 minutes and more initiator was added after 5.5 hours. Polymerization was stopped after 8.5 hours. The maximum bulk viscosity was 820 cp, compared with 10,000 cp when all the ammonium sulfate was added at the start.

#### TECHNOLOGY FOCUS

**Polymers - Preferred Process:** The other portions of the salt are added during the first quarter of the total polymerization time following initiation.

**Preferred Dispersant:** This is a polyelectrolyte, polyol or soluble carbohydrate derivative, especially polyethylene glycol, polypropylene glycol, a 2-acrylamido-2-methyl-1-propanesulfonic acid homopolymer, a diallyl dimethyl ammonium chloride polymer or an acryloyloxyethyl trimethyl ammonium chloride polymer.  
**Inorganic Chemistry - Preferred Salt:** This is a sodium, potassium, ammonium, magnesium or aluminum sulfate, phosphate or halide. (19pp367DwgNo.0/1)

FR 2815635-A